In the Claims:

1. (presently amended) A tracking method for a supply chain having at least a first stage and a second stage, the method comprising:

receiving first stage information on a crop, the first stage information comprising crop information inputted at the first stage by a first stage party;

receiving a need for a quantity and delivery date of a corresponding crop, the need inputted at a second stage by a second stage party for access to at least one first stage party;

conducting a transaction in the crop between a first stage party and a second stage party via a communications network, the transaction defined by contract data retrievable by a contract identifier reference, the contract data including at least one of the following lab results for the transaction: protein content, deoxyribose nucleic acid (DNA) content, pesticide content, moisture content, foreign matter content, ash content, vitamin content, and mineral make-up;

receiving second stage information on a product derived from the crop, the second stage information comprising processing information inputted at the second stage; and

processing the first stage information and the second stage information so that the first stage information is associated with the second stage information to form an ingredient history on origins of a generally comprehensive list of ingredients in the product and grain ingredient performance data associated with ~~of~~ the product derived from the crop;

storing the first stage information and the second stage information in at least one of a first stage database and a second stage database; and

authorizing a defined extent of access to the stored first stage information via the second stage in a permission grant by each first stage party inputting the corresponding stored first stage information, the permission grant specifying an authorized second stage party and an authorized portion of the stored first stage information accessible by the authorized second stage party.

2. (original) The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein the stored first stage information and the stored second stage information are accessible at the second stage and at least one successive stage in the supply chain.

3. (original) The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein the first stage is a producer stage and the second stage is a processing stage.

4. (original) The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 3, wherein the first stage information includes at least one of producer name, producer address, producer phone number and inventory information.

5. (previously amended) The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 4, wherein the crop information includes at least one of crop type, crop variety, crop moisture, protein and test weight.

6. (previously amended) The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein the second stage information includes at least one of planning data, storage data, milling data, moisture level of grain, protein level of grain, kernel size, moisture level of flour, protein level, flour storing data, packaging data, data indicative of yields in production, finished product storage data and shipping data.

7. (original) The tracking method for a supply chain having at least a first stage and a second stage as set forth in claim 1, wherein the first stage information is input at the second stage because the first stage is a non-participant in a transactional supply chain system and the second stage is a participant in the transactional supply chain system.

8. (presently amended) A tracking method for a supply chain having at least a first stage and a second stage, the method comprising:

receiving first stage agricultural information on an agricultural item, the first stage agricultural information comprising crop information inputted at the first stage;

receiving a need for a quantity and delivery date of a corresponding agricultural item, the need inputted at a second stage by a second stage party fro access to at least one first stage party;

conducting a transaction in the agricultural item between a first stage party and a second stage party via a communications network, the transaction defined by contract data retrievable by a contract identifier reference, the contract data including at least one of the following lab results for the transaction: protein content, deoxyribose nucleic acid (DNA) content, pesticide content, moisture content, foreign matter content, ash content, and mineral make-up;

receiving second stage information on a product derived from the agricultural item, the second stage information comprising processing information inputted as the second stage;

processing the first stage agricultural information and the second stage agricultural information so that the first stage agricultural information is associated with the second stage agricultural information to form an ingredient history on origins of a generally comprehensive list of ingredients in the product and grain ingredient performance data associated with of the product derived from the crop;

storing the first stage agricultural information and the second stage agricultural information in at least one of a first stage database and a second stage database; and

authorizing a defined extent of access to the stored first stage agricultural information via the second stage and at least one successive stage in the supply chain in a permission grant by each first stage party inputting the corresponding stored first stage information, the permission grant specifying an authorized second stage party and an authorized portion of the stored first stage information accessible by the authorized second stage party, and where the first stage is one of a producer stage and a processing stage, and the second stage is one of a processing stage, a storage stage and a manufacturing stage.

9. (previously amended) A tracking method for a non-linear supply chain, the method comprising:

recording a history of a first item, the first item comprising a grain ingredient, traversing a first path of the non-linear supply chain, defined by multiple distinct outputs derivable from processing the grain ingredient at a corresponding non-linear nodal stage;

recording ingredient inventory information associated with the first item at a stage along the first path, the ingredient inventory information comprising quantity data and quality data on the first item, the quality data comprising at least one of the following lab results for the first item: protein content, deoxyribose nucleic acid (DNA) content, pesticide content, moisture content, foreign matter content, ash content, and mineral make-up;

recording a history of a second item, the second item comprising a product derived from the grain ingredient, traversing a second path of the non-linear supply chain overlapping or intersecting at least a portion of the first path; and

recording product inventory information associated with the second item at a stage along the second path; and

controlling inventory of the grain ingredient associated with the first path according to the recorded ingredient inventory information and the recorded product inventory information to minimize a storage level of the grain ingredient by a purchaser thereof consistent with tracking pending orders for the second item.

10. (original) The tracking method for a non-linear supply chain as set forth in claim 9, wherein the first path includes at least one multi-output stage, the first item resulting from one of a plurality of outputs of the multi-output stage along the first path.

11. (original) The tracking method for a non-linear supply chain as set forth in claim 9, wherein the second path includes at least one multi-output stage, the second item resulting from one of a plurality of outputs of the multi-output stage along the second path.

12. (previously amended) The tracking method for a non-linear supply chain as set forth in claim 9, wherein recording the history of the first item includes

associating first information applying to a stage of the non- linear supply chain with the first item, the first information including at least one of first quantity information, first performance information and first quality information, and

associating second information applying to another stage with the first item, the second information including at least one of second quantity information, second performance information and second quality information.

13. (previously amended) The tracking method for a non-linear supply chain as set forth in claim 12, wherein

the other stage is one of the multi-output stage and the stage along the first path.

14. (previously amended) The tracking method for a non-linear supply chain as set forth in claim 9, wherein recording the history of the second item includes

associating first information applying to a stage of the non-linear supply chain with the second item, the first information including at least one of quantity first information, first performance information and first quality information, and

associating second information applying to another stage with the second item, the second information including at least one of second quantity information, second performance information and second quality information.

15. (previously amended) The tracking method for a non-linear supply chain as set forth in claim 9, wherein the recording of the history of the second item includes associating the ingredient inventory information applying to the stage of the non-linear supply chain with the second item.

16. (canceled).

17. (original) The tracking method for a non-linear supply chain as set forth in claim 12, further comprising:

transmitting the first information and the second information to at least one individual of a plurality of individuals within or outside the non-linear supply chain, the first information and the second information informing the at least one individual about the history of at least the first item.

18. (canceled).

19. (previously added) The tracking method for a non-linear supply chain as set forth in claim 12, wherein the stage is one of the multi-output stage and the stage along the first path.

20. (previously added) The tracking method for a non-linear supply chain as set forth in claim 14, wherein the stage is one of the multi-output stage and the stage along the second path.

21. (previously added) The tracking method for a non-linear supply chain as set forth in claim 14, wherein the other stage is one of the multi-output stage and the stage along the second path.

22. (previously added) The tracking method for a non-linear supply chain as set forth in claim 15, wherein the stage is the multi-output stage.

23. (canceled).

24. (canceled).

25. (canceled).

26. (previously added) The method according to claim 1 wherein the authorized portion of the stored first stage information comprises at least one of particular field data and crop variety data.

27. (previously added) The method according to claim 1 wherein the first stage party comprises a producer of an agricultural product and the authorized second stage party comprises a processor of the agricultural product; and wherein the producer authorizes the defined extent of access with respect to the processor.

28. (previously added) The method according to claim 1 wherein the authorized portion of the stored first stage information comprises at least one of moisture level data and lot specifications associated with a particular variety of grain or a grain recipe in a specific storage container.

29. (previously added) The method according to claim 1 wherein the authorized portion comprises quality data associated with one or more particular lots of finished products, the quality data selected from the group consisting of specification compliance data for a finished product, bake score data for the finished product, and yield data for the finished product.